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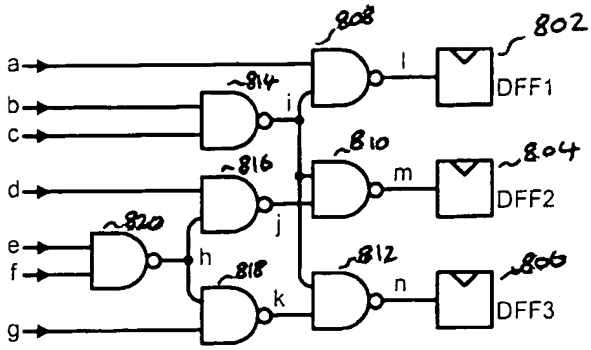


Figure 2

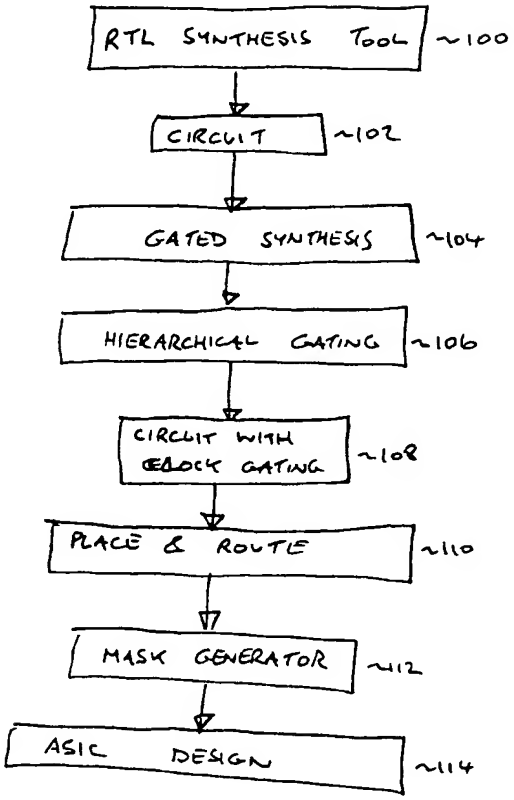


FIGURE 1

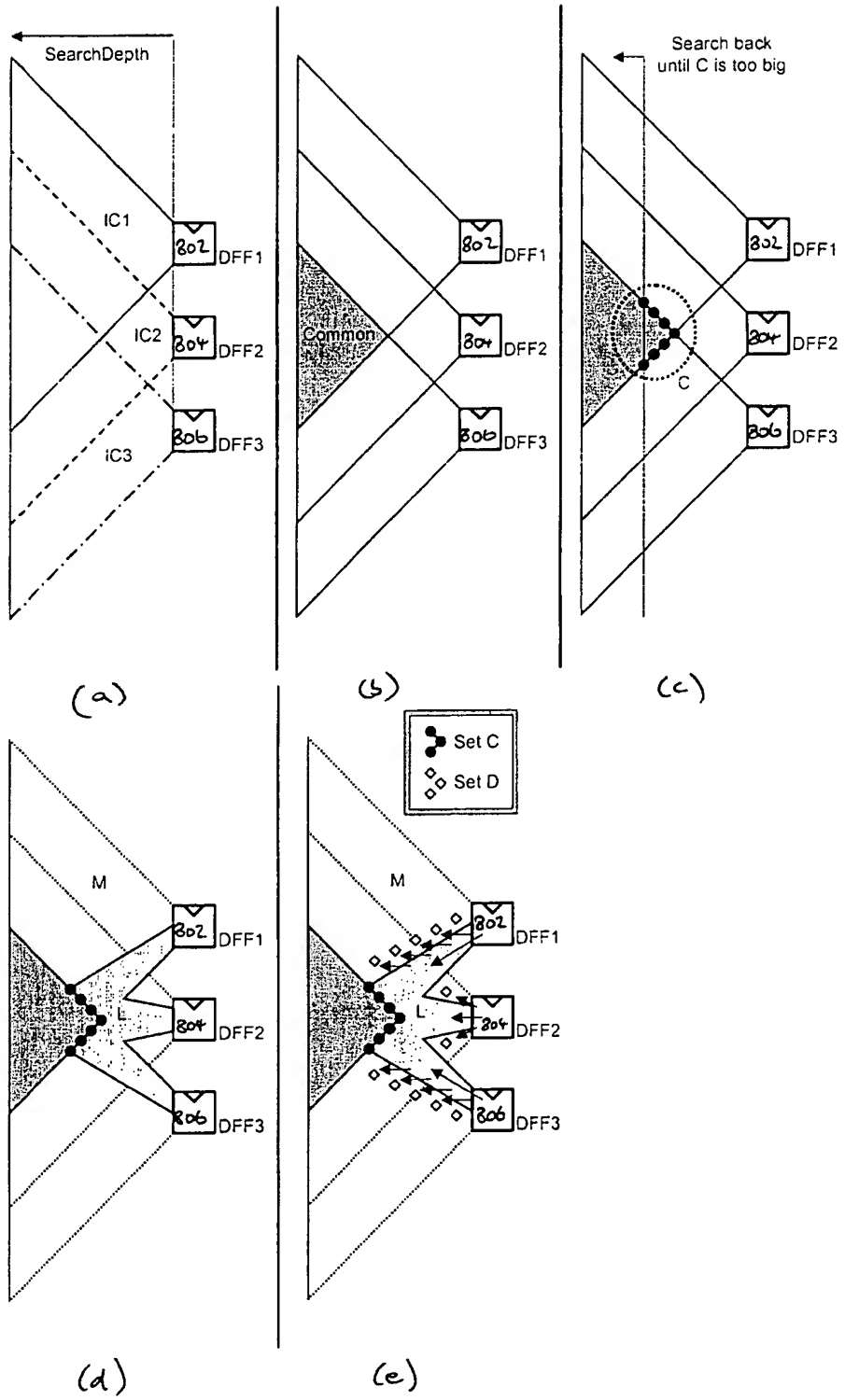

SearchDepth
IC1
IC2
iC3
802
DFF1
804
DFF2
806
DFF3
(a)
Common
(b)
Search back
until C is too big
C
(c)
M
L
(d)
Set C
Set D
(e)

Figure 3

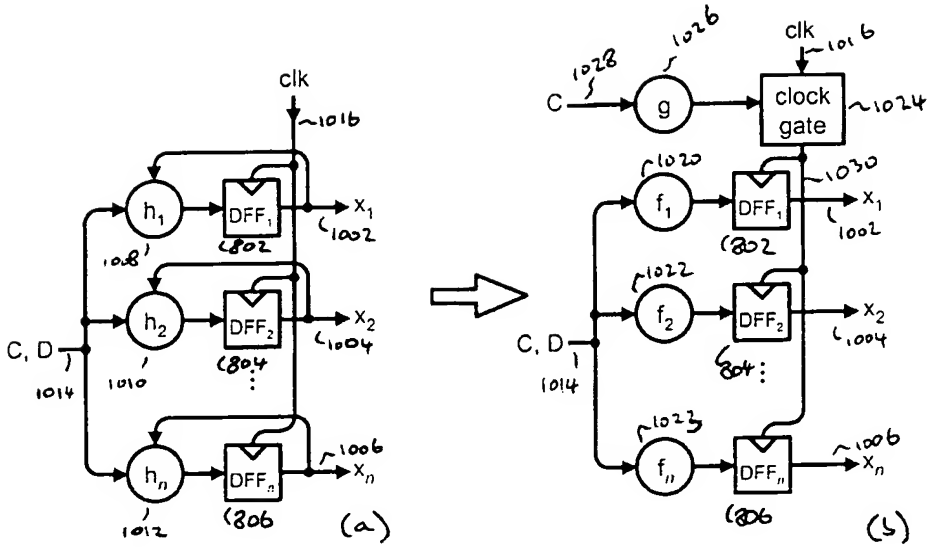


Figure 4

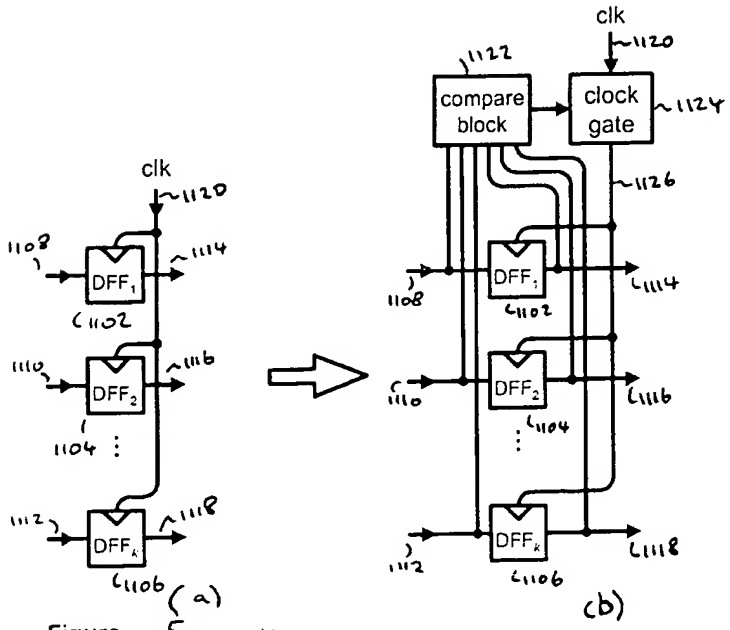
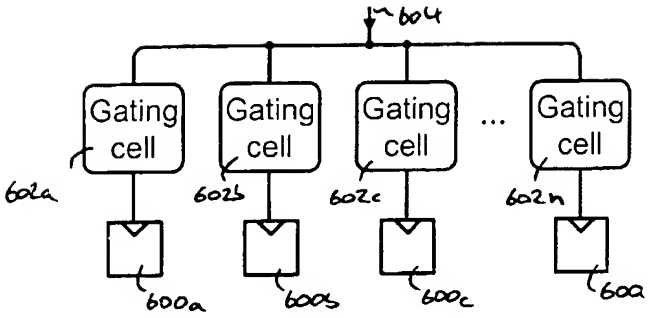


Figure 5



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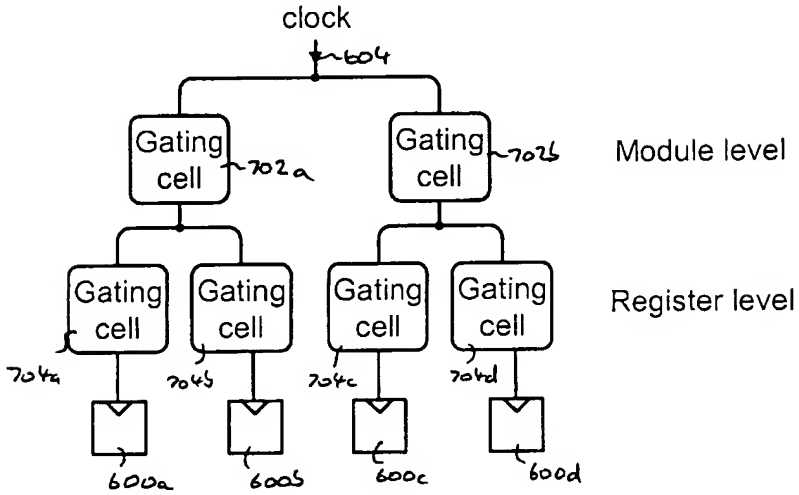

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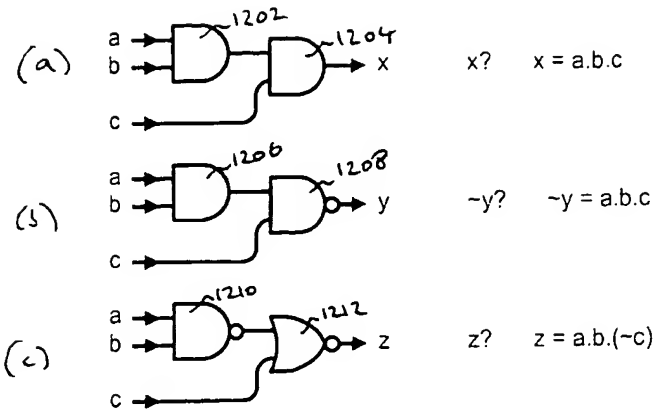


Figure 8

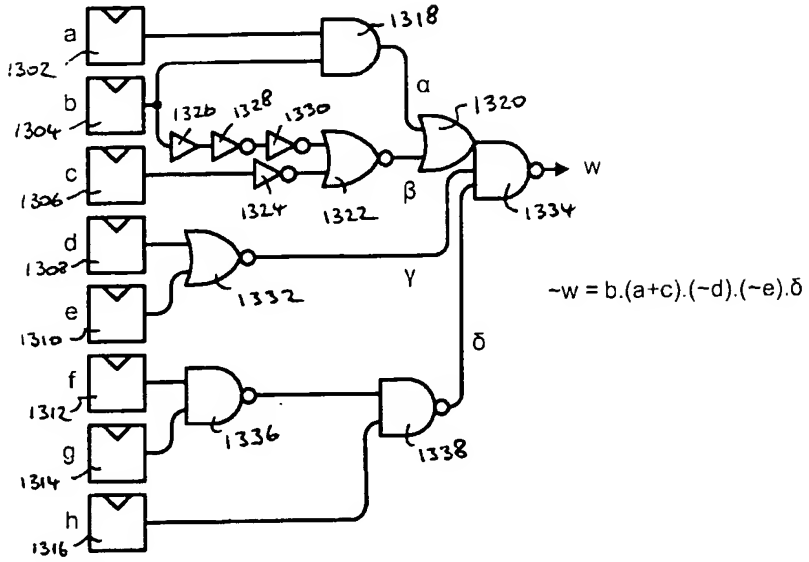


Figure 9

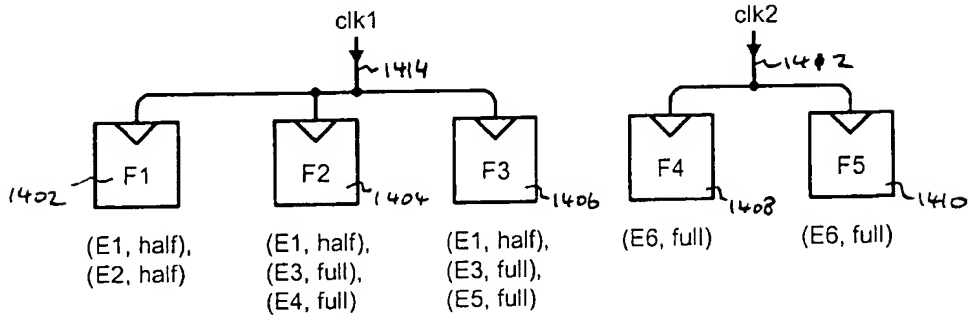


Figure 10

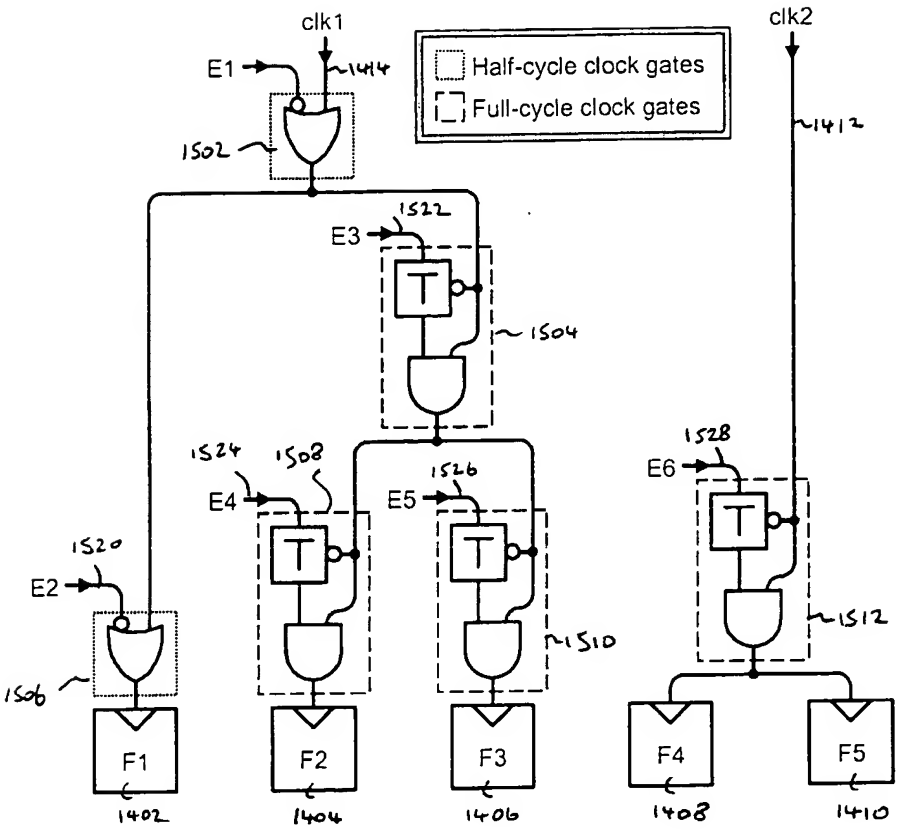


Figure 11

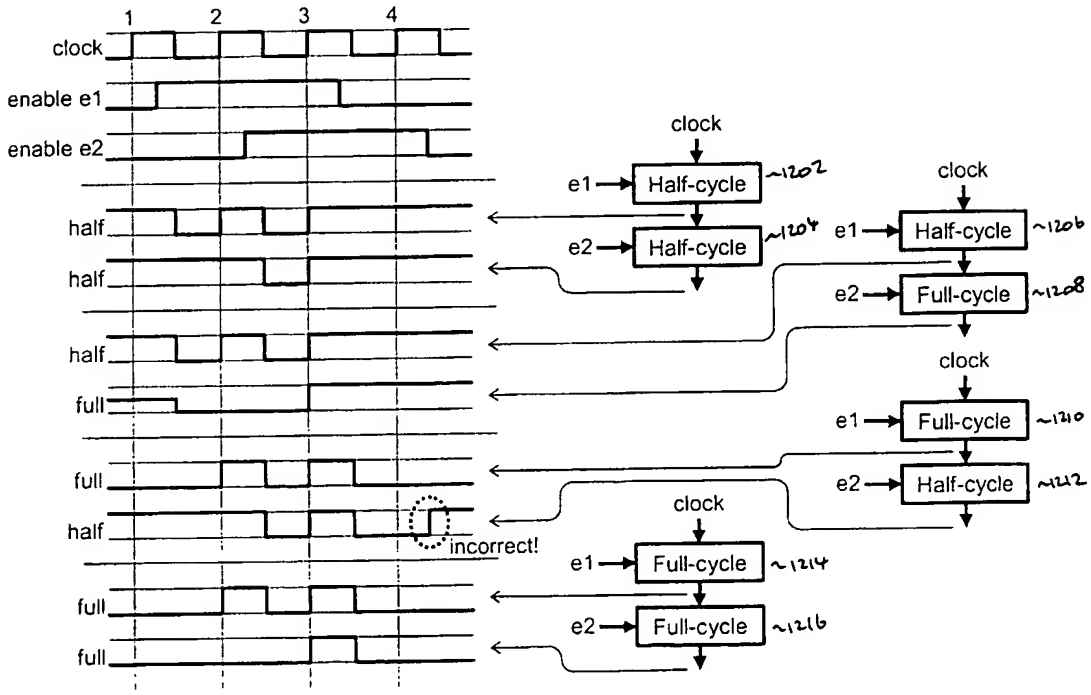


Fig 12

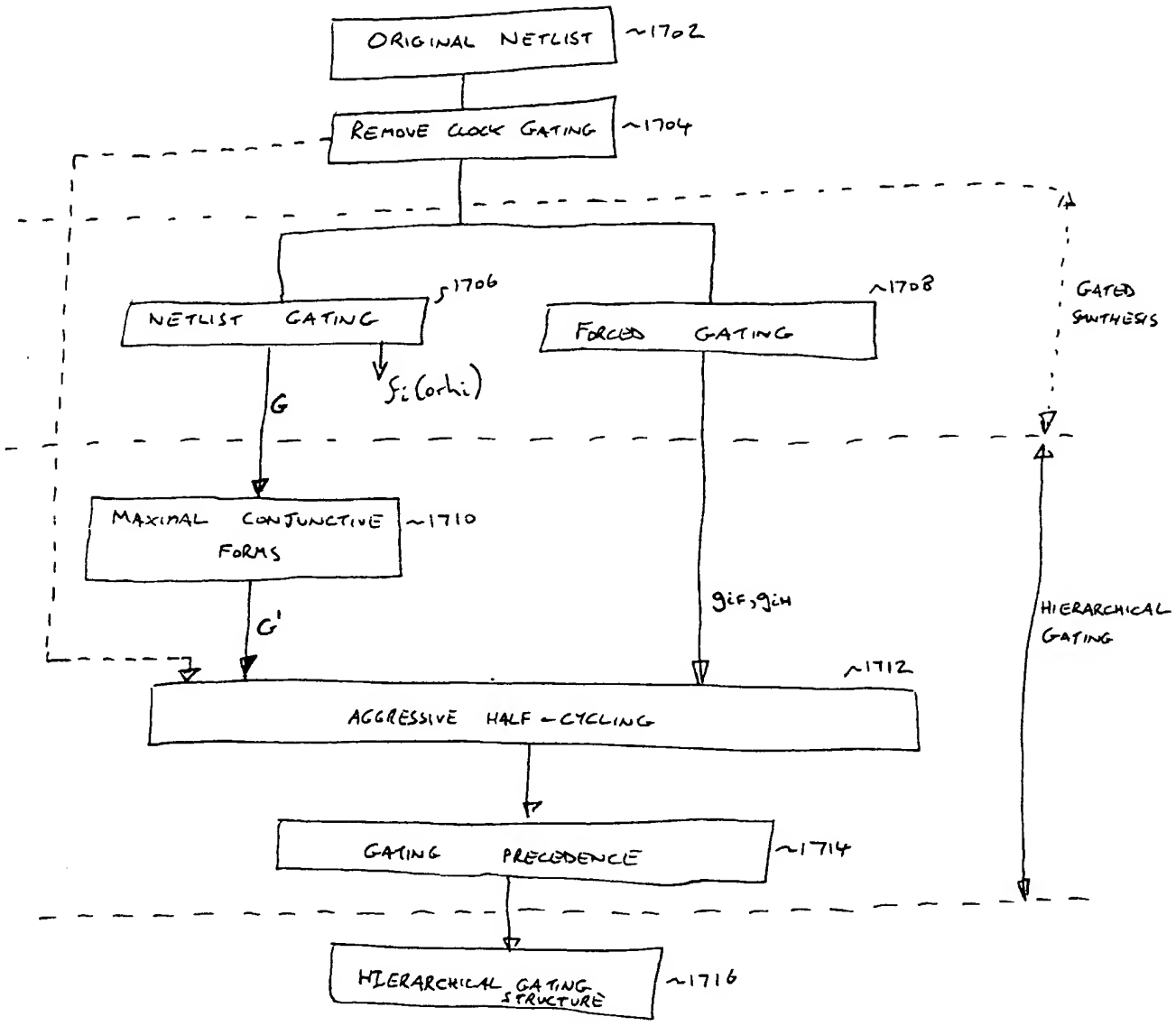
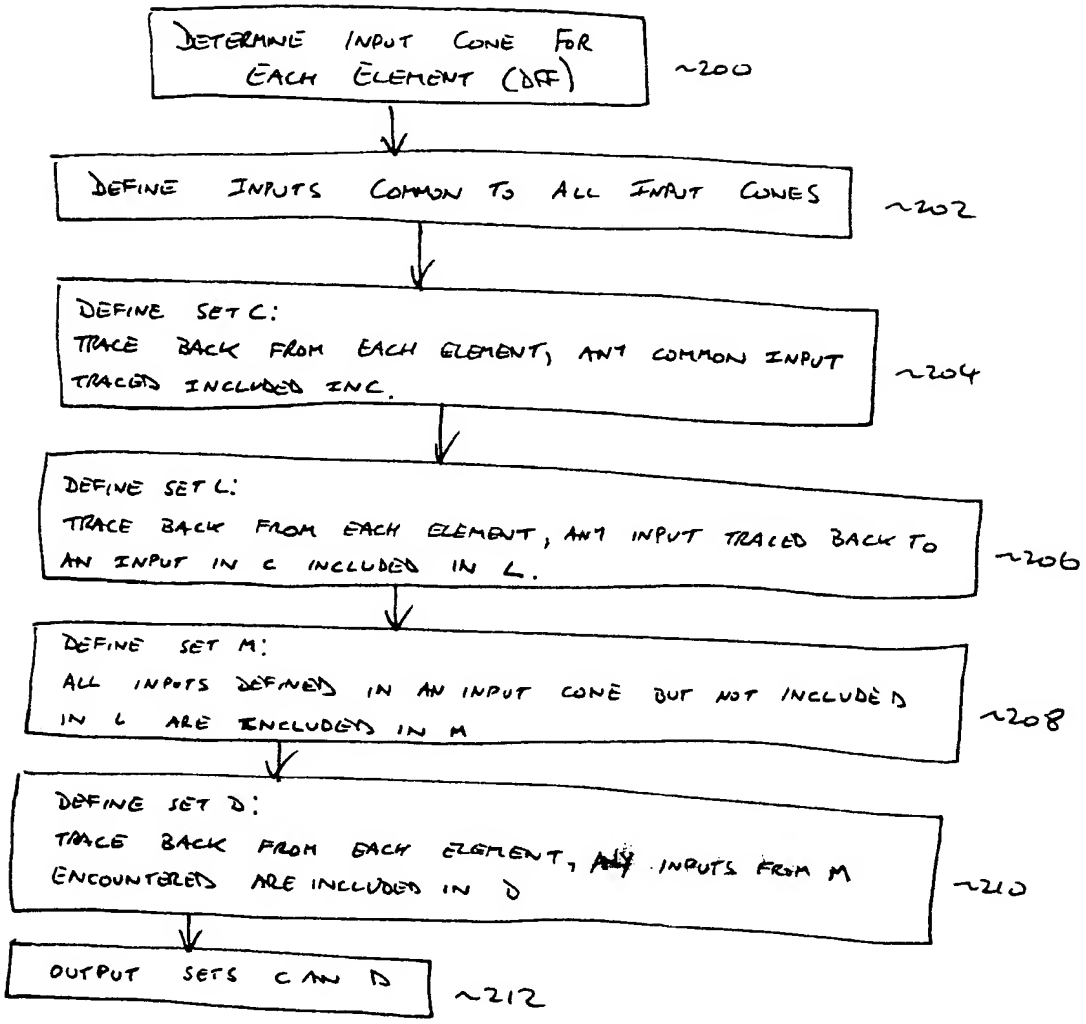
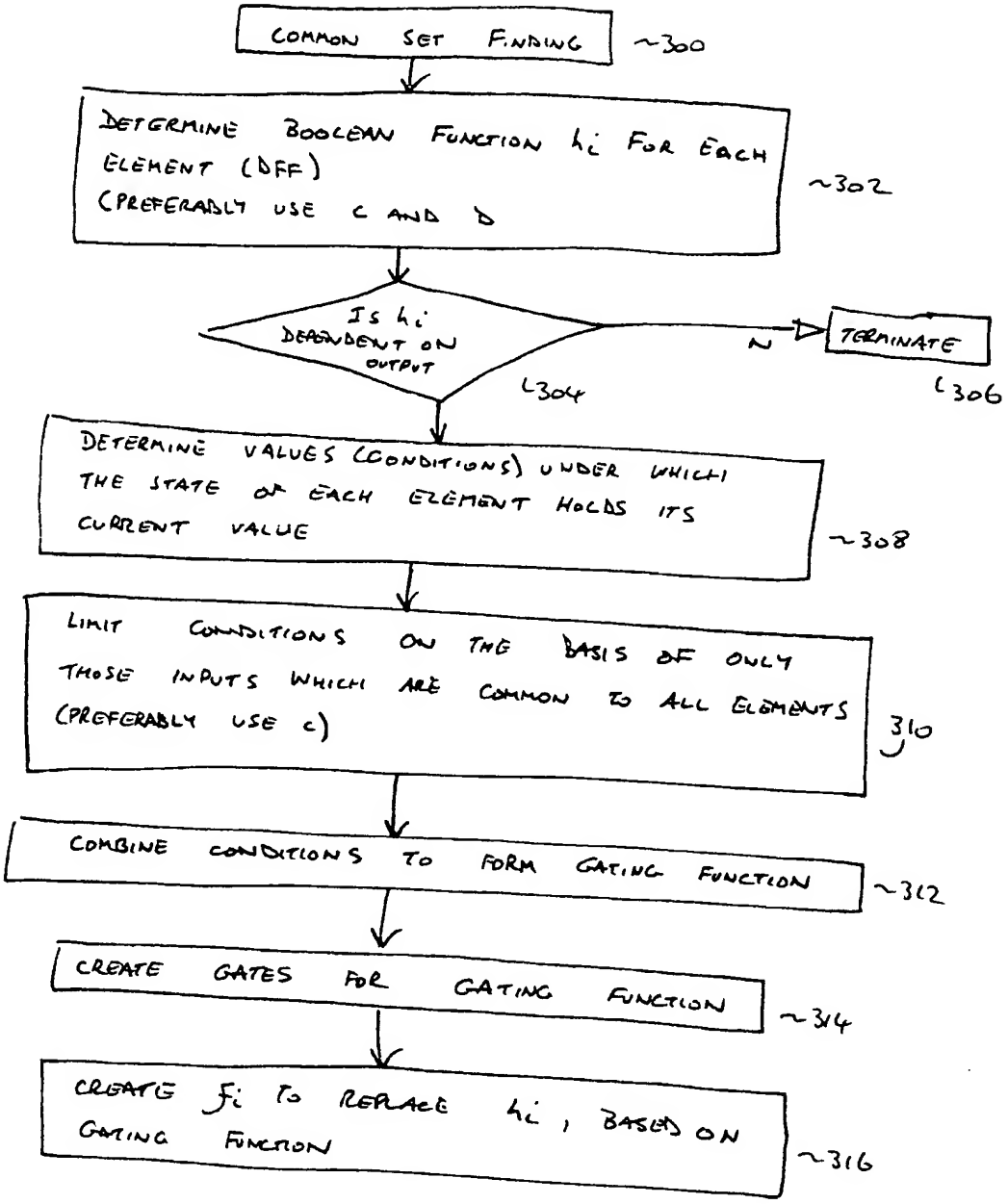

ORIGINAL NETLIST
~1702
REMOVE CLOCK GATING
~1704
NETLIST GATING
~1706
FORCED GATING
~1708
GATED SYNTHESIS
$f_i(or h_i)$
G
MAXIMAL CONJUNCTIVE FORMS
~1710
G'
g_{iF}, g_{iH}
HIERARCHICAL GATING
~1712
AGGRESSIVE HALF-CYCLING
GATING PRECEDENCE
~1714
HIERARCHICAL GATING STRUCTURE
~1716

Fig 13



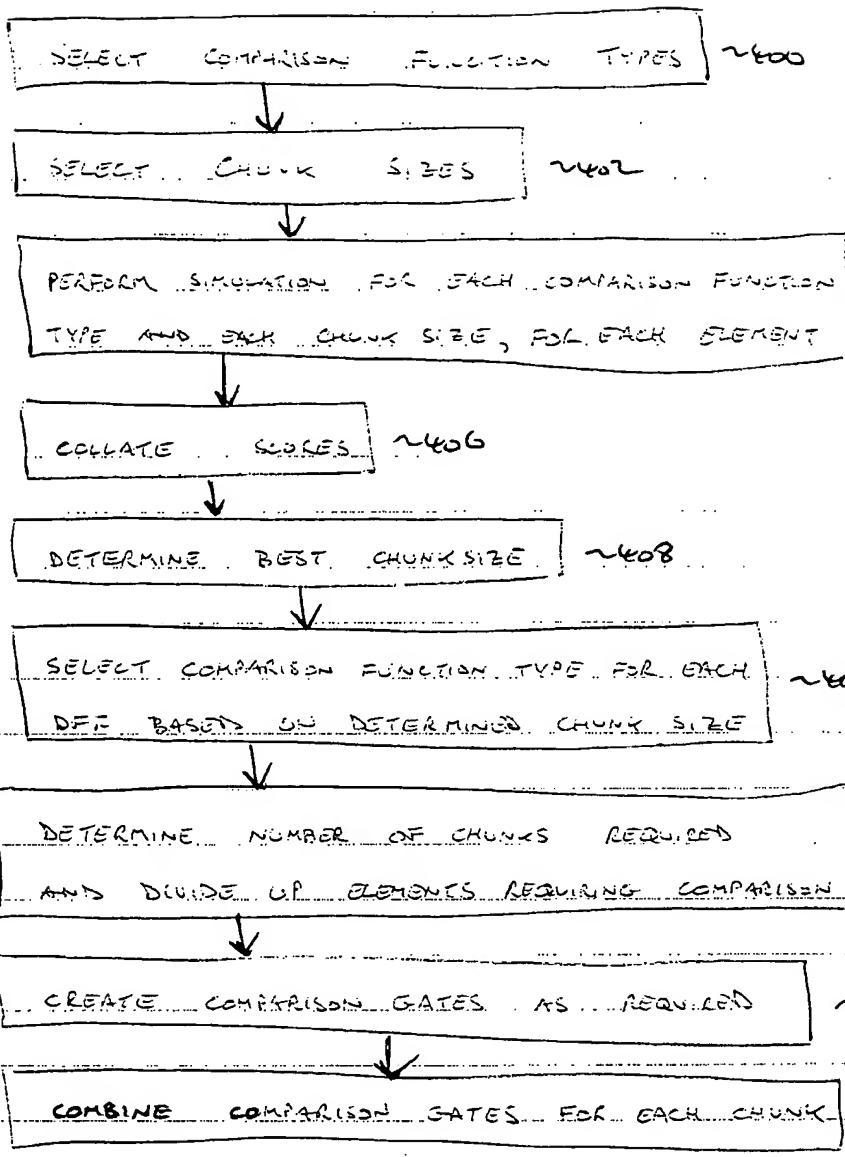
COMMON SET FINDING

Fig 14



NETLIST GATING

Fig 15



FORCED GATING

FIG 16

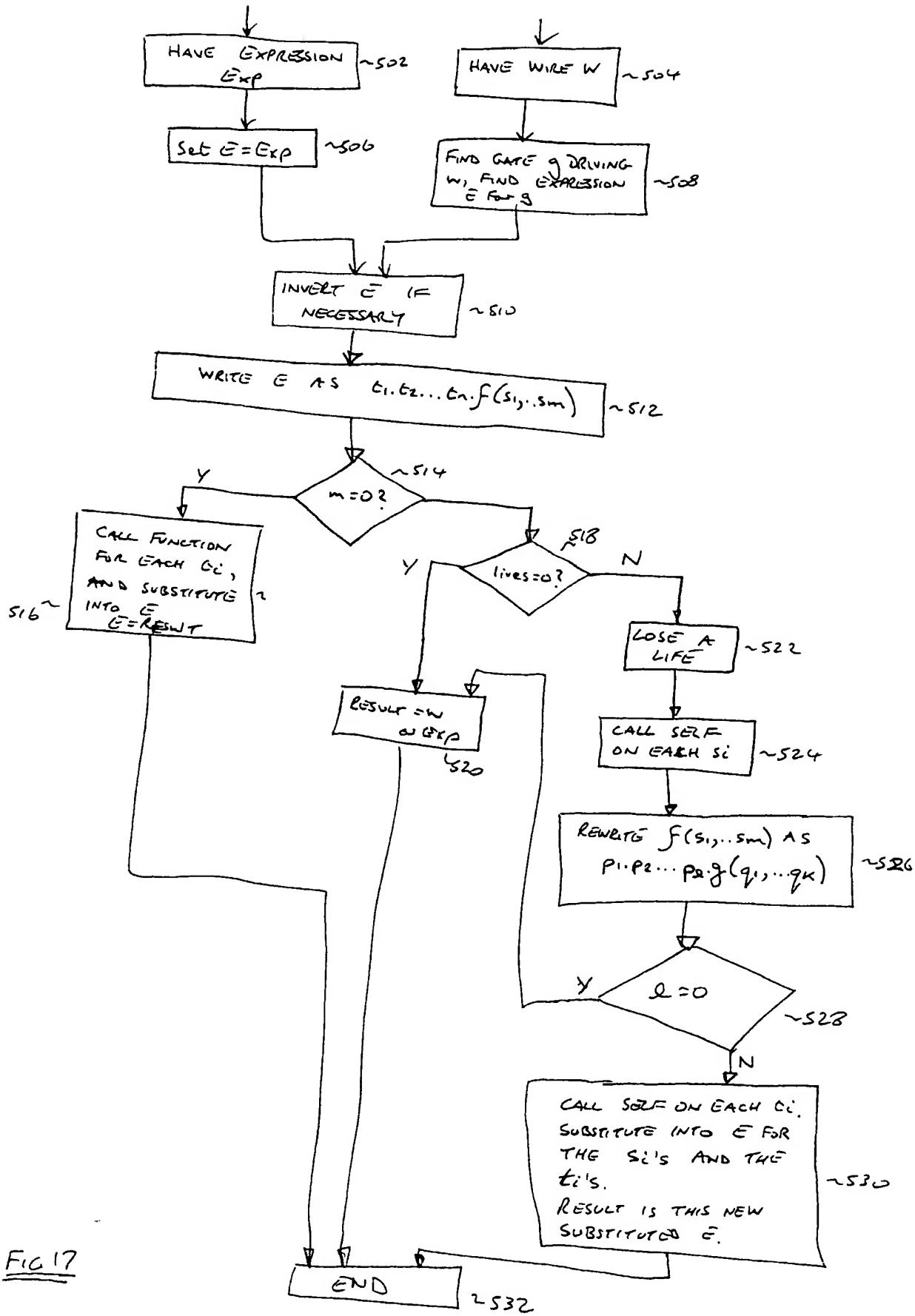

HAVE EXPRESSION Exp
~502
HAVE WIRE W
~504
Set E = Exp
~506
FIND GATE g DRIVING W, FIND EXPRESSION E for g
~508
INVERT E IF NECESSARY
~510
WRITE E AS t1.t2...tn.f(s1,..sm)
~512
m=0?
~514
Y
N
CALL FUNCTION FOR EACH ti, AND SUBSTITUTE INTO E
E=RESULT
516
lives=0?
518
Y
N
LOSE A LIFE
~522
RESULT = W
~520
CALL SELF ON EACH si
~524
REWRITE f(s1,..sm) AS p1.p2...pk.g(q1,..qk)
~526
l=0
~528
Y
N
CALL SELF ON EACH ti. SUBSTITUTE INTO E FOR THE si's AND THE ti's. RESULT IS THIS NEW SUBSTITUTED E.
~530
END
~532

Fig 17